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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/666,046 | 09/20/2003 | **Sunil K. Nagarajrao** | SJO920030012US1 | 6579 |

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| EXAMINER | |
|---|---|
| CHEA, PHILIP J | |
| **ART UNIT** | **PAPER NUMBER** |
| 2453 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/666,046 | NAGARAJRAO ET AL. | |
| | Examiner | Art Unit | |
| | PHILIP J. CHEA | 2453 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *11 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,3-5,17 and 21-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,17,21-24 and 27-30* is/are rejected.

7)☐ Claim(s) *25,26 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

**DETAILED ACTION**

This Office Action is in response to an Amendment filed December 11, 2008. Claims 1,3-5,17,21-31 are currently pending of which claims 21-31 are new. Any rejection not set forth below has been overcome by the current Amendment.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,3-5,17,21-24,27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matheny et al. (US 2002/0161883), herein referred to as Matheny, and further in view of Goringe et al. (US 2003/0046427), herein referred to as Goringe.

As per claim 1, Matheny discloses a network management system for discovering information about a network, as claimed, comprising:

a plurality of nodes (see Fig. 1 [110], *showing a plurality of network devices (i.e. nodes)*);

plural discovery agents on said nodes adapted to discover information concerning said network (see paragraph 8, *describing a number of discovery agents to perform a coordinated network discovery for network [100]*);

each of said discovery agents having an associated discovery capability (see paragraph 17, *describing how the agents have capabilities such as attributes of the agents, calls that the agents supports that are defined in a capability matrix, and different discovery agents may perform discovery operations using different techniques, and may collect different types of data (see paragraph 11))*;

each of said discovery agents having an associated discovery assignment (see paragraph 19, *describing how a discovery operation is initiated by a network manager wherein the request may include*

*requested data types and designate an address range or subnets for discovery and the discovery request may be compared to the available capabilities defined by the capability matrix for the agent)*; and

collectively, said agent discovery assignments being a subset of said agent discovery capabilities (see paragraph 19, *since the request includes an assignment that is compared to the available capabilities, it is implied that the assignment may not use the entire capability of the agent, for example the assignment may be to discover a certain range of addresses that is a subset of the range of addresses that the agent is capable of discovering)*;

said agent discovery capabilities being overlapping (see paragraph 19, *describing how more than one agent can be capable of performing the requested discovery request*).

Although the system disclosed by Matheny shows substantial features of the claimed invention (discussed above), it fails to disclose said discovery assignments being non-overlapping, such that no network device is discovered more than once by different discovery agents seeking the same information, one or more agents are not permitted to perform full discovery of information due to one or more other discovery agents being assigned to discover the same information and no duplicate discovery information is generated.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Matheny, as evidenced by Goringe.

In an analogous art, Goringe discloses a system for discovering a topology of a distributed processing network that includes a first topology discovery agent configured to contact a first set of routers and a second topology discovery agent configured to contact a second set of routers (see Abstract). Goringe further discloses discovery assignments being non-overlapping, such that no network device is discovered more than once by different discovery agents seeking the same information, one or more agents are not permitted to perform full discovery of information due to one or more other discovery agents being assigned to discover the same information and no duplicate discovery information is generated (see paragraph 43, *describing how the system maintains a number of listings (outstanding, finished, etc) to avoid duplication of computational effort during topology discovery (i.e. implying seeking the same information if the goal is to not have duplication of computational effort) so that interfaces that*

*have been contacted do not need to be contacted again implying one or more agents not permitted to perform full discovery of information because they limit their full discovery to avoid duplication and non-overlapping discovery assignments so that no network device is discovered more than once by different agents and no duplicate discovery information is generated*).

Given the teaching of Goringe, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Matheny by employing non-overlapping discovery assignments, such as disclosed by Goringe, in order to avoid duplication of computational effort.

As per claim 3, Matheny further discloses that the agent discovery assignments are based on said discovery capabilities of different discovery agents and a determination of which discovery agents having overlapping discovery capabilities are most fit to receive said agent discovery assignments (see paragraph 19, where the agents are picked based on the capabilities according to a matrix, i.e. the most fit agents are picked to receive the discovery assignments).

As per claim 4, Matheny further discloses that the agent discovery assignments reflect one or more data collection service registrations in which a network manager in said system registers with said plurality discovery agents, to receive specified discovery information agents cost to obtain network information, load balancing among said plural discovery agents, and assignment churn (see paragraph 17, *describing registration operation for registering agents for data collection*).

As per claim 5, Matheny further discloses that agent discovery assignments comprise one or both of inband and outband discovery assignments (see paragraph 11).

As per claim 17, Matheny-Goringe disclose a network discovery agent for use in a data storage network, as claimed, comprising:

a processing node (see Matheny paragraph 8);

discovery capability logic determining and providing agent discovery capability information to a requestor, said agent discovery capability information being a subset of all discovery information obtainable by said agent (see Matheny paragraph 19, *describing a requestor (i.e. network manager)*

*requesting a discovery request and checking the capability of agents that can satisfy the desired discovery request*); and

discovery query logic implementing discovery queries based on agent discovery assignment information determined from said capability information (see Matheny paragraph 19, *where the discovery queries are performed based on the agents that were qualified to perform the discovery*); and

said agent discovery capability overlapping the discovery capability of one or more other network discovery agents and said discovery queries utilizing non-overlapping discovery assignments relative to said other discovery agents, such that no network device is discovered more than once by different discovery agents seeking the same information said discovery agent performs discovery of some information that said other discovery agents are not permitted to obtain and no duplicate discovery information is generated (see Goringe paragraph 43, *showing how duplication of computational effort is avoided implying seeking the same information but only having certain agents cover a certain area to avoid duplication and some agents are not permitted to obtain certain information that is already obtained to avoid duplication*).

As per claim 21, Matheny further discloses that the agent discovery assignments for one or more of said discovery agents are a subset of said discovery capabilities of said one or more discovery agents (see paragraph 19, *since the request includes an assignment that is compared to the available capabilities, it is implied that the assignment may not use the entire capability of the agent, for example the assignment may be to discover a certain range of addresses that is a subset of the range of addresses that the agent is capable of discovering*).

As per claim 22, Matheny-Goringe fails to particularly disclose that one or more of said discovery agents are capable of discovering said information from said network device but are given no discovery assignment at all. However, In re Karlson renders the claim obvious by eliminating elements and its function. At the time of the invention, one or ordinary skill in the art would have found it obvious to give some agents no discovery assignment at all even though they are capable of discovering information because another agent could have potentially covered the same area and since Goringe is concerned

with avoiding duplication, one of the agents could be given no assignment at all to avoid duplication with another agent that is given the same assignment.

As per claim 23, Matheny further discloses that the agent discovery assignments are based on said discovery capabilities being processed by a network manager and each discovery agent's discovery assignment being stored at said discovery agent for subsequent reference (see paragraph 19 and 20).

As per claim 24, Matheny further discloses that the agent discovery assignments are based on an input listing of said discovery agents, the network devices they are capable of discovering and a cost to discover each network device, and an output listing of said discovery agents and the network devices and discovery agents are assigned to discover (see paragraphs 17,19-21).

As per claim 27, Matheny further discloses that he discovery agents are configured to conduct agent capability queries in response to capability polls requested by a network manager (see paragraph 19).

As per claim 28, Matheny further discloses that the agent capability queries seek a minimal subset of information required to effect calculation of said agent discovery assignments (see paragraph 19).

As per claim 29, Matheny further discloses that each of the discovery agents is configured to implement a full discovery query that returns a complete information hierarchy identifying all levels of discoverable entities in a path from said agent to all network endpoints reachable by that agent, and to further implement said agent capability query that gathers a subset of said complete information hierarchy for use in computing said agent assignments (see paragraph 19).

As per claim 30, Matheny further discloses that the agents are configured to conduct said agent capability queries based on said capability polls being issued in response to one or more of a network event being detected an agent's discovery capabilities having changed and an agent being added, removed or modified (see paragraph 17).

***Allowable Subject Matter***

3. Claims 25-26,31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

4. Applicant's arguments filed December 11, 2008 have been fully considered but they are not persuasive.

A) Applicant contends that Goringe teaches full discovery capabilities of discovery agents should be utilized to perform discovery.

In considering A), the Examiner respectfully disagrees. The full discovery capabilities of the agents are hindered because there is a need to avoid duplicate computational effort. The Examiner believes that the agents are not used to their full capability because duplications would occur if they are. Instead, the agents don't discover their full capability in order to avoid the duplication. Therefore, as long as the agents can potentially discover the same information, but do not discover the same information to avoid the duplication, the Examiner believes that it reads on the limitations requiring agents seeking the same information and one is not permitted to perform full discovery of information due to one or more other discovery agents being assigned to discover the same information (to avoid duplication).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILIP J. CHEA whose telephone number is (571)272-3951. The examiner can normally be reached on M-F 6:30-4:00 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Philip J Chea
Examiner
Art Unit 2453

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